

DRAWINGS ATTACHED

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## (54) ELECTRICAL CONNECTORS

(71) We, JOSEPH LUCAS (INDUSTRIES) LIMITED, of Great King Street, Birmingham, 19, a British Company, do hereby declare the invention for which we pray that a Patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to electrical connectors of the kind comprising an electrically insulating body, a bore in the body, a metal connector member occupying the bore, and means for preventing removal of the connector member from the bore.

The object is to provide an electrical connector of the kind specified in a convenient form.

In accordance with the present invention, an electrical connector of the kind specified comprises an elongated metal connector member having a laterally extending projection, the body having at least one shoulder in its bore for engagement by the projection, and at least one resilient tongue formed integrally in the body in the wall of the bore, the free end of said tongue being presented towards the shoulder and arranged to engage the projection on the connector member, the arrangement being such that when the connector member is inserted into the bore, the projection deflects the resilient tongue and when the projection has passed the tongue and has one side in engagement with the shoulder, the tongue will engage the opposite side of the projection to hold the connector member in place.

The invention will now be described by way of example with reference to the accompanying drawings in which:—

Figure 1 is an enlarged cross-sectional view of an electrical connector constructed in accordance with the invention, and

Figure 2 is an end elevation view with the metal connector member omitted.

The drawing shows an electrically insulat-

ing body 10, which may be part of an electrical component, or alternatively, part of a socket-forming member for engagement with a corresponding spigot-forming member. Such socket and spigot-forming members may be formed to provide a plurality of electrical connections.

Within the body 10 there is formed a square cross-section bore.

Two opposite sides of the bore, of the body 10, are provided with integral inwardly extending portions 14, which extend from one end of the bore to the mid-region thereof. The terminations of these portions 14, at the mid-region of the bore, are inclined to the bore axis to form respective shoulders 15. The portions 14 have concave inwardly presented faces, to provide clearance for a metal connector member 11.

The other two opposite sides of the square bore of the body 10 are provided with integral inwardly extending tongues 16, which are connected to the body 10 nearer to the end remote from the portions 14 in the bore. The free ends of the tongues 16 terminate in the mid-region of the bore, adjacent to, but spaced from, the shoulders 15. The operative ends of the tongues are part annular.

Within the bore is disposed the elongated metal connector member 11. The connector member 11 is tubular and at one end is provided with arms which embrace and grip a cable end indicated at 12. Intermediate its ends, the connector member 11 has an integral annular projection 13.

With the metal connector member 11 in place, the annular projection 13, thereon, engages on one side with the shoulders 15 of the portions 14, and on the other side with the free ends of the tongues 16. In order to assemble the metal connector member into the body 10, it is inserted with its tubular end foremost and as the projection 13 reaches the tongues these are deflected

until the projection 13 reaches engagement with the shoulders 15, whereupon the tongues 16 spring inwardly to engage the projection and prevent removal of the connector member 11.

The metal connector member 11, in an alternative example, provides a spigot for engagement in a corresponding socket in a connector member, or component.

In a further alternative example only one shoulder 15 is provided in the bore for engagement by the projection 13. A discontinuous projection, or a plurality of separate projections may be provided on the connector member 11.

#### WHAT WE CLAIM IS:—

1. An electrical connector of the kind specified comprising an elongated metal connector member having a laterally extending projection, the body having at least one shoulder in its bore for engagement by the projection, and at least one resilient tongue formed integrally in the body in the wall of the bore, the free end of said tongue being-presented towards the shoulder and arranged to engage the projection on the connector member, the arrangement being such that

when the connector member is inserted into the bore, the projection deflects the resilient tongue and when the projection has passed the tongue and has one side in engagement with the shoulder, the tongue will engage the opposite side of the projection to hold the connector member in place.

2. An electrical connector as claimed in claim 1 in which the projection on the connector member is annular.

3. An electrical connector as claimed in claim 1 or claim 2 in which the bore in the body has two oppositely arranged tongues and two shoulders which are disposed in line with the spaces between the tongues.

4. An electrical connector as claimed in any one of the preceding claims in which the connector member comprises a socket or a spigot.

5. An electrical connector of the kind specified substantially as hereinbefore described with reference to the accompanying drawings.

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